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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/091,567 | 03/07/2002 | Jonathan P. Wong | NEL-006 | 7851 |

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| EXAMINER | |
|---|---|
| HILL, MYRON G | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1648 | |

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/091,567 | WONG ET AL. | |
| | Examiner | Art Unit | |
| | Myron G. Hill | 1648 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *13 July 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *20-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *20-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

This action is in response to paper file 13 July 2005.

Claims 20-32 are under consideration.

### *Rejections Withdrawn*

### *Claim Rejections - 35 USC § 102*

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 20-23 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Sha *et al.*

Applicant's arguments were considered persuasive and the rejection is withdrawn.

### *Claim Rejections - 35 USC § 103*

Claims 20, 24, 25, and 27-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sha *et al.* and Promega Catalog.

Applicant's arguments were considered persuasive and the rejection is withdrawn.

***New Rejections***

***Claim Rejections - 35 USC § 112***

Claims 26 and 28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The support for the ratio does not make sense.

"amount/ml of amount/ml" does not specify anything. The paragraph seems to indicate that the lipids are 10 mg/ml and plasmid is added to a final concentration of 400 [micrograms]/ml but a "concentration of a concentration" does define a specific amount.

Furthermore, in claim 28, if the lipids are 10 mg/ml, then when they are reconstituted at 20% of original volume then the amount is different.

Claims 1 and 29-32 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The instant claims are evaluated for scope of enablement based on the Wands analysis. Many of the factors regarding undue experimentation have been summarized in *In re Wands*, 858 F.2d 731,8 USPQ2d 1400 (Fed.Circ.1988) as follows:

(1) the nature of the invention, (2) the state of the prior art, (3) the predictability or lack thereof in the art, (4) the amount of direction or guidance present, (5) the presence or absence of working examples, (6) the quantity of experimentation necessary, (7) the relative skill of those in the art, and (8) the breadth of the claims.

The invention is drawn to methods of treating or preventing or inducing long lasting immunity.

The prior art does not teach this liposomal formulation with an influenza gene.

Sha et al. demonstrates that not all liposomal formulations are effective as vaccine immunogens.

The specification provides no guidance on the treatment of or prevention of influenza in humans. There is no showing of what is meant by long lasting or that it is the same as or longer than accepted influenza vaccines.

There is no showing that the vaccine is safe or works in humans. Liposomal vaccines are not routine in humans. While mucosal administration is desired there is no description of doses or immunity induced in humans.

The enabling disclosure is clearly not commensurate in scope with these claims. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. Clearly there is lack of guidance directing a skilled artisan to practice the instantly claimed methods. Without specific guidance or direction and /or working examples, one of ordinary skill in the art would not be able to reproducibly practice the entire scope of the invention as claimed, without undue experimentation.

***Claim Rejections - 35 USC § 103***

Claims 20-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wheeler et al. and Webb et al. in view of Sha et al and Promega Catalog (the last two references previously cited).

The invention is drawn to an encapsidated plasmid influenza vaccine.

Wheeler et al. teach the encapsidation method essentially as claimed. They teach a lipid to DNA ratio of 25 to 1 and method of making as listed in claim 28 (page 279, column 2, lower half).

Wheeler et al. do not teach C8 cermide or influenza plasmids.

Webb et al. teach C8 cermide.

Promega Catalog teaches an expression plasmid pCI, as previously noted.

One of ordinary skill in the art at the time of invention would have been motivated to modify the cermide of Wheeler et al. with the C8 of Webb et al because Wheeler et al. show that the between two lengths tested (C14 and C20), the shorter worked better (Figure 7). The next lower size is C8 as shown by Webb et al.

Wheeler et al. define the critical parameter as the DODAC concentration (Figure 1 b) and the best result is with DOPE and the highest encapsidation is between 6-8% DODAC. Wheeler et al. used 6% but it is clear that 7% falls at the middle of the peak. Wheeler et al also states that the maximum encapsidation is varies from batch to batch by about 1% (273, column 1, top). None of the other parameters are taught as critical.

Sha et al. teach that some liposomal formulations do not work and that inducing mucosal immunity is important. One of skill in the art would be motivated to use a modified Wheeler et al based liposomal formulation to over come the failure of Sha et al. because of the advantages taught by Wheeler et al of the benefits of this delivery vehicle and the amount of DNA encapsidated. One of skill in the art would know to use expression vectors such as the promega because it is optimized for expression and be able to clone a HA of influenza because it is known to be antigenic.

Thus, it would be *prima facie* obvious to modify the liposomes of Wheeler et al. to use the C8 of Webb et al. to make a lipidated influenza plasmid with expectation of success of making a liposomal vaccine with an encapsidated plasmid that encodes influenza hemagglutinin.

## ***Conclusion***

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Myron G. Hill whose telephone number is 571-272-0901. The examiner can normally be reached on 8:30 am-5 pm Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Housel can be reached on 571-272-0902. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Myron G. Hill
Patent Examiner
28 September 2005

JAMES HOUSEL 10/5/05
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